

**Listing of Claims:**

1. (currently amended) A detector for an imaging device, comprising
  - a) a substrate (1);
  - b) an array (2) of sensor elements (3), which is formed on one side of the substrate (1);
  - c) at least one integrated electronic module (4) for processing sensor signals, the module (4) being mounted at one edge (5) of the substrate (1) and being connected at its input side to the sensor elements (3), and the module (4) comprising at least one analog-digital converter for conversion of analog input signals into digital output signals, wherein the module is mounted on the same side of the substrate as the array of sensor elements.
2. (currently amended) A detector as claimed in claim 1, characterized in thatwherein the substrate (1) comprises amplifiers for amplifying the input signals of the integrated module (4).
3. (currently amended) A detector as claimed in claim 1, characterized in thatwherein the substrate (1) comprises at least one of one or more multiplexers connected upstream of the integrated module (4) and/or one or more multiplexers connected downstream of the integrated module (4).
4. (currently amended) A detector as claimed in claim 1, characterized in thatwherein the integrated module (4) comprises at least one of one or more amplifiers for amplifying the input signals and/or comprises at least one or more multiplexers.
5. (currently amended) A detector as claimed in claim 1, characterized in thatwherein the integrated module (4) is manufactured from crystalline silicon.

6. (currently amended) A detector as claimed in claim 1, ~~characterized in that~~wherein the array (2) of sensor elements (3) extends along the one side of the substrate at three sides right up to three edges of the substrate (1).

7. (currently amended) A detector as claimed in claim 1, ~~characterized in that~~wherein the integrated module (4) is connected to the substrate (1) by at least one of flip-chip contacting, by wire-bonding or by and mounting of packaged ICs on a wafer.

8. (currently amended) A detector as claimed in claim 1, ~~characterized in that~~wherein the substrate (1) comprises electronics of crystalline or amorphous silicon.

9. (currently amended) A detector as claimed in claim 1, ~~characterized in that~~wherein the sensor elements (3) are sensitive to X-radiation and/or visible light.

10. (currently amended) An imaging device comprising; ~~especially an X-ray apparatus, characterized by a detector as claimed in claim 1 a detector having a substrate, an array of sensor elements, and at least one integrated electronic module for processing sensor signals, wherein the array of sensor elements is formed on only one side of the substrate, wherein the module is mounted at one edge of the substrate and is connected at an input side of the module to the sensor elements, wherein the module has at least one analog-digital converter for conversion of analog input signals into digital output signals, and wherein the module is mounted on the same side of the substrate as the array of sensor elements.~~

11. (new) The imaging device of claim 10, wherein the detector has a plurality of amplifiers, wherein the array of sensor elements is positioned in columns, wherein each of the columns has a readout lead, and wherein each readout lead is connected to one amplifier of the plurality of amplifiers.

12. (new) The imaging device of claim 10, wherein the detector has a plurality of flexible connections downstream of the modules for connecting the modules to remote electronics.

13. (new) The imaging device of claim 10, wherein the detector has one or more analog multiplexers connected upstream of the integrated module and one or more digital multiplexers connected downstream of the integrated module.

14. (new) The detector of claim 1, further comprising a plurality of amplifiers, wherein the array of sensor elements is positioned in columns, wherein each of the columns has a readout lead, and wherein each readout lead is connected to one amplifier of the plurality of amplifiers.

15. (new) The detector of claim 14, further comprising one or more analog multiplexers connected upstream of the integrated module and one or more digital multiplexers connected downstream of the integrated module.

16. (new) The detector of claim 1, further comprising a plurality of flexible connections downstream of the modules for connecting the modules to remote electronics.

17. (new) A method of forming a detector for an imaging device, the method comprising:

providing a substrate;

positioning an array of sensor elements along a first side of the substrate, wherein the array extends to all but one of the edges of the substrate;

providing one or more integrated electronic modules having analog-digital converter for conversion of analog input signals into digital output signals;

positioning one or more integrated electronic modules for processing sensor signals on the one edge of the substrate along the first side of the substrate; and

connecting an input of each of the modules to one or more of the sensor elements.

18. (new) The method of claim 17, further comprising:

- positioning a plurality of amplifiers on the first side of the substrate;
- positioning the array of sensor elements in columns;
- connecting a readout lead to each of the columns; and
- connecting each read out lead to an amplifier of the plurality of amplifiers.

19. (new) The method of claim 17, further comprising:

- positioning one or more analog multiplexers upstream of the module on the first side of the substrate; and
- positioning one or more digital multiplexers downstream of the module on the first side of the substrate.

20. (new) The method of claim 17, further comprising:

- providing a plurality of flexible connections downstream of the modules on the first side of the substrate for connecting the modules to remote electronics.